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VIEW IN THE KREMLIN AT MOSCOW.

THE Kremlin is one of the divisions of the city of Moscow, which escaped the conflagration that in 1811 destroyed almost the whole of that city, and clouded the hopes and fortunes of Buonaparte. This escape is doubtless attributable to the fact of its having been built chiefly of stone, whereas the remainder of Moscow was principally composed of wooden houses.

The Kremlin derives its name from the Russian word *krem* or *krim*, which signifies a fortress. It stood in the central and highest part of the city, is of a triangular form, and about two miles in circumference. It is surrounded by high walls of stone and brick, which were constructed by Peter Solarius, a Milanese, in the year 1491.

It is not a little extraordinary that the Tzars should have employed foreign architects at so early a period of their history as that in which the Kremlin was built, and when they were but little known to the rest of Europe. Such, however, was the case: and the consequence is, that this curious place wears a most anomalous appearance amongst the surrounding specimens of Russian taste and skill, of which it commands an extensive view. It contains the ancient palace of the Tzars, the arsenal, and several convents and churches: together with other buildings of various uses, and different degrees of magnificence.

In the midst of the Kremlin is a deep pit, containing the great bell of Moscow, which is known to be the

largest ever founded. The current account of its fall is fabulous: it lies in the same place in which it was cast, and never was, nor ever could have been suspended.

Its circumference is sixty-seven feet four inches, its height twenty-one feet four inches and a half, its thickness in the part where it would have received the blow of the hammer twenty-three inches, and its weight has been computed to be 443,772 lbs.; which, if valued at three shillings a pound, amounts to 66,565*l.* 16*s.* The great gun is another of the wonders of this place; it is about eighteen feet and a half long, ten inches thick, and of sufficiently large calibre to allow of a man sitting upright within it. Such are some of the curiosities of the Kremlin.

"There was," says Dr. E. D. Clarke, "a plan to unite the whole Kremlin, having a circumference of two miles, into one magnificent palace. Its triangular form, and the number of churches it contained, offered some difficulties, but the model was rendered complete. Its fronts are ornamented with ranges of beautiful pillars, according to different orders of architecture. Every part of it was finished in the most beautiful manner, even to the fresco paintings on the ceilings of the rooms, and the colouring of the various marble columns intended to decorate the interior. It incloses a theatre and magnificent apartments. Had the work been completed, no edifice could ever have been compared with it. It would have surpassed the Temple of Solomon, the Propylæum of Amasis, the Villa of Adrian, or the Forum of Trajan.

"The architecture exhibited in different parts of the Kremlin, in its palaces and churches, is like nothing seen in Europe. The architects were generally Italians; but the style is Tartarian, Indian, Chinese, and Gothic: here a pagoda—there an arcade! In some parts richness, and even elegance—in others barbarity and decay! Taken altogether, it is a jumble of magnificence and ruin. Old buildings repaired, and modern structures not completed; half-open vaults and mouldering walls, amidst white-washed brick buildings, and towers, and churches, with glittering, gilded, or painted domes."

LIBRARIES.

But what strange arts, what magic can dispose
 The troubled mind to change its native woes!
 Or lead us willing from ourselves, to see
 Others more wretched, more undone than we?
 This, books can do—nor this alone; they give
 New views to life, and teach us how to live;
 They soothe the grieved, the stubborn they chastise;
 Fools they admonish, and confirm the wise;
 Their aid they yield to all: they never shun
 The man of sorrow, nor the wretch undone;
 Unlike the hard, the selfish, and the proud,
 They fly not sullen from the suppliant crowd;
 Nor tell to various people various things,
 But show to subjects what they show to kings.

The Library.—CHADBE.

FROM the earliest ages, and in every state of society, men have been desirous of preserving testimonies and memorials of the achievements and glory of their forefathers, their lustre being reflected on themselves. During many centuries, tradition alone conveyed from one generation to another the deeds and story of nations; but it naturally, in course of time, became obscure and fabulous, as any defect in the memory would be supplied by the aid of imagination. As soon, therefore, as the invention of means to supply the defects of tradition were discovered, oral authority would be superseded by written, and collections of records be formed.

To the Hebrews is attributed, in the collection and preservation of the Sacred Writings, the earliest formation of a library. The Greeks, Romans, Egyptians, and many other nations, formed public collections of books. The first literary collection of the Greeks was established by Pisistratus of Athens, in the sixth century before Christ; that of the Romans by Asinius Pollio; and the celebrated Alexandrian library by Ptolemy Philadelphus, 284 years B. C. This last contained 700,000 volumes; by which we must not understand *volumes* such as our modern libraries are composed of, but rolls of papyrus or parchment, each containing only a chapter or small subdivision of the whole work. This immense collection, after various vicissitudes, was at last totally destroyed by order of Omar, the Arabian caliph, A. D.

638; who, being solicited to preserve it, returned the well-known answer: "If these writings of the Greeks agree with the Koran, they are useless, and not to be preserved: if they disagree, they are pernicious, and ought to be destroyed." Gibbon says, "The sentence was executed with blind obedience; the volumes of paper or parchment were distributed to the four thousand baths of the city, and such was their incredible multitude, that six months were barely sufficient for the consumption of this precious fuel."

But two centuries before this period the northern hordes of barbarians had invaded the Roman empire, which crumbled to pieces under their unceasing attacks. In less than a century after their settlement in their new conquests, almost all the effects of the knowledge and the civilization which had spread through Europe disappeared. In the destruction of cities, the libraries also shared in the universal desolation, and Europe had to pass through a long night of darkness and ignorance. The little that remained of the world's knowledge found refuge in the monasteries, where, however, these precious volumes were in general as little appreciated as by the barbarian spoilers. It is related that in the middle ages manuscripts were not unfrequently destroyed, in binding works on useless scholastic divinity; sometimes for the making of rackets for the amusement of the idle monks; and even what were spared lay rotting in some neglected corner. We ought not, however, to think too harshly of the conduct of these illiterate monks; it is scarcely to be expected they would set much value upon what they could not understand. Persons of the highest rank, in those times, could not read or write; many of the clergy did not understand the breviary, which they were obliged daily to recite; some of them could scarcely read it. Even in late years, it is reported that Sir Robert Cotton redeemed the original of Magna Charta from the hands of a tailor, who was on the point of cutting it up for measures. Yet some gleams of light shone brightly in the dark ages. To those men of learning, who devoted their time, their means, and their health, to the collecting

and preserving of the remains of the dispersed libraries, the world owes a debt of gratitude. The few following facts, showing the extreme rarity and value of manuscripts in the four or five centuries preceding the invention of printing, will be neither uninteresting nor uninformative.

In the ninth century, the Abbot of Pontivi, in possessing two hundred volumes, was considered to have the largest library in France.

In the tenth century, so scarce and so valuable were manuscripts, that a copy of the Homilies of Aymon of Halberstat was purchased by a Countess of Anjou for two hundred sheep, three measures of corn, and a number of skins of valuable furs.

In the eleventh century, the abbey of Pomposa, near Ravenna, in Italy, although celebrated for the extent of its library, possessed only 63 volumes, 7 of which were volumes of the classics.

In 1048, the Abbot of Gemblours, in Flanders, had collected, in addition to 100 volumes on theological, 60 volumes on profane subjects, and imagined he had formed a splendid library.

In the twelfth century, the catalogue of the Abbey of Monte Cassino, one of the wealthiest in Europe, consisted but of 90 volumes, and yet had required the labors and journeyings of two successive abbots to collect.

In 1251, the chapter of the Cathedral of Ratisbon purchased 500 volumes for 67 marcs of gold, equivalent to about 10,000*l.*, or 20*l.* for each volume.

In the succeeding century, we may date the commencement of the revival of learning. It gave birth to many celebrated men; among whom, none more so than Petrarcha, Boccaccio, and Richard de Bury, Bishop of Durham, who spared neither labor nor expense in collecting manuscripts; accordingly we find the libraries throughout Europe much increasing. In 1373, the library of the King of France contained 910 volumes, and had increased to about 1100 volumes in 1425, when the greater part of it was sent to England by the regent, Duke of Bedford; and in 1439, the cardinal Bassarian, with royal profusion, had collected 600 manuscripts, at the enormous

cost of about 30,000 Roman crowns, equivalent to about 26,000*l*.

From these notices of the scarcity and high price of books, it must be obvious that they were within the reach of but few. Indeed, none but kings and prelates could enjoy the costly privilege of a library. At last, in the middle of the fourteenth century, occurred the greatest revolution in the history of literature, or of the human mind. The art of printing was invented; and whilst Æneas Sylvius, Pope Pius II., in 1458, was writing in his *Cosmographia*, that the destruction of all written documents would, ere long, be inevitable, this art was impressing on them perpetuity and ten-fold value. A learned continental bibliographer has made a calculation, that from the year 1455 to 1500, 14,750 editions had been printed from presses established in 212 cities; which, at an average of 435 copies for each edition, would give 5,416,250 volumes as the circulation of books in 45 years. Again, from 1501 to 1536, the number of cities had decreased from 212 to 184, yet 17,779 editions had been produced; and, in consequence of a greater demand for books, each edition may probably have increased to 1000 copies, which would give us an amount of 17,779,000 copies. From these calculations it results, that during the interval of 81 years, from the date of the first printed book to the year 1536, no less than *twenty-three millions of volumes* had been circulated among mankind! Nor will our average appear an extravagant one, as it is well known that, in the year 1526, as many as 26,000 copies of the *Colloquies* of Erasmus were printed and sold.

From this period, books became accessible to all classes of society; and, after a few years, national public libraries were formed, which have ever since continued to increase, and which have mainly contributed to the subsequent advance of literature. The principal throughout Europe are—

The Vatican, said to contain	-	500,000 volumes.
The Royal Library at Paris	-	350,000
Of pamphlets	-	300,000
Manuscripts	-	50,000

Vienna	-	-	-	-	300,000 volumes.
Munich	-	-	-	-	400,000
Gottingen	-	-	-	-	200,000
British Museum	-	-	-	-	181,000
George III.'s Library	-	-	-	-	65,000
Manuscripts	-	-	-	-	20,000
Bodleian	-	-	-	-	200,000

In addition to these, almost every scientific and literary institution, and most of the ecclesiastical foundations in Europe, have libraries attached to them, of greater or less extent. These vast repositories contain not only such works as are most useful, but such as, from their costliness or scarcity, are inaccessible to ordinary students.

The number of books in foreign libraries is very difficult to be ascertained with precision, and the statements differ so much, that the preceding estimates are, in many cases, little better than approximations.

In the United States the principal libraries are that of Harvard College, 36,000 volumes; of the Boston Athenæum, 26,000; of the Philadelphia Library, 27,000; of the New York Society Library, 23,000; of Congress, 16,000; of Charleston, 13,000.

Thus has useful knowledge been extended and cheapened by the exertions of the moderns. The difficulty of the student is no longer to obtain, but to select, the best sources of information from the bewildering accumulations with which he is surrounded. If the literary world be in an unhealthy state, it arises from plethora—from so vast an abundance of resources, as distracts investigation, and prevents the formation of a judicious choice. At all events, there can now be no excuse for ignorance. That power which the immortal Bacon attributes to knowledge, is, wielded by the hands of millions; and it now becomes the special and increasing duty of the moralist and the Christian, to heighten its benefits, by keeping pace with its progress, and by the assiduous inculcation of virtuous principles, to prepare the world for those important changes, which all the phenomena of society appear to indicate.

STANZAS,

WRITTEN BY AN OFFICER LONG RESIDENT IN INDIA, ON HIS RETURN TO
ENGLAND.

I CAME, but they had pass'd away,—
The fair in form, the pure in mind,—
And, like a stricken deer, I stray,
Where all are strange, and none are kind;
Kind to the worn, the wearied soul,
That pants, that struggles for repose:
Oh! that my step had reached the goal
Where earthly sighs and sorrows close!

Years have pass'd o'er me like a dream,
That leaves no trace on memory's page;
I look around me, and I seem
Some relic of a former age.
Alone, as in a stranger-clime,
Where stranger-voices mock my ear,
I mark the lagging course of time,
Without a wish—a hope—a fear!

Yet I had hopes—and they have fled;
And I had fears—were all too true:
My wishes, too!—but they are dead,
And what have I with life to do?
'Tis but to bear a weary load,
I may not, dare not, cast away:
To sigh for one small, still abode,
Where I may sleep as sweet as they:—

As they, the loveliest of their race,
Whose grassy tombs my sorrows steep—
Whose worth my soul delights to trace—
Whose very loss 'tis sweet to weep—
To weep beneath the silent moon,
With none to chide, to hear, to see;
Life can bestow no dearer boon
On one whom death disdains to free.

I leave a world that knows me not,
To hold communion with the dead;
And fancy consecrates the spot
Where fancy's softest dreams are shed.
I see each shade all silvery white;
I hear each spirit's metting sigh;
I turn to clasp those forms of light,
And the pale morning chills my eye.

But soon the last dim morn shall rise;
The lamp of life burns feebly now,—
When stranger-hands shall close my eyes,
And smooth my cold and dewy brow.
Unknown I lived—so let me die;
Nor stone, nor monumental cross,
Tell where his nameless ashes lie,
Who sigh'd for gold, and found it dross.

REMAINS OF ANCIENT ART IN EGYPT.

THE traveller usually lands at Alexandria, a city which in any other part of the world except Egypt would be denominated ancient. The pillar which graces that capital of the Grecian kings was long associated with the name of Pompey the Great; but an inscription upon it has, in modern times, been distinctly made out, which proves, that its last dedication was to the Emperor Diocletian, by a prefect who happened to bear the same name as the rival of Julius Cæsar.

The Alexandrian pillar stands upon a pedestal twelve feet high, which has obviously been formed of stones previously used for some other purpose. The shaft is round, about ninety feet in length, and surmounted by a Corinthian capital which adds ten feet more to the elevation. The column, we believe, is one block of porphyry, although it has more usually been described as consisting of syenite or Egyptian granite. It is nine feet in diameter, with a perceptible entasis, but without hieroglyphics; remarkably well cut, and very little injured by the effects of time. No one, however, can fail to perceive that the shaft does not correspond with the capital, base, and pedestal, which are extremely poor both in execution and taste.

It is to be deeply regretted that the architectural beauties of this celebrated monument are not a little defaced by the undue freedoms which have been used by certain European visitors. One of the latest writers on the subject informs us, that what with black paint and red ochre, pitch and sand, the pedestal and the lower part of the shaft may now rival the party-coloured mantle of Jacob's favorite son. It was in vain to look for any of Diocletian's inscriptions, since the scribbling of those who had ascended to the top had obliterated all other traces. It appears, that in March, 1827, the officers of the Glasgow, ship of war, by means of flying a kite, had passed a string over the top of the column—to this they fastened a cord, and eventually a rope ladder. Their example has been followed by the crew of almost

every king's ship since stationed in that port. Breakfasts have been given, and letters written on the top, and even a lady has had courage to ascend. But the national flag having on one occasion been left by a party, the governor took so much offence as to prohibit all such frolics for the time to come.*

There is a want of unanimity among travellers as to the precise import of the inscription on this famous pillar. M. Quatremere has ascertained that there was in the time of Diocletian a prefect whose name was Pompeius, and thereby afforded a strong corroboration to the opinion of those who think that the monument was raised in honor of that Emperor by one of his deputies. But Dr. Clarke read the Greek characters so as to substitute Adrian instead of Diocletian; and found out, at the same time, that the name of the commander who dedicated the pillar was Posthumus rather than Pompeius. The greater number, however, follow the version which retains the latter appellation, and which by that means accounts so easily for the vulgar error in regard to the object of the erection.

We are informed by Denon, that the earth about the foundations of the pillar having been dug away, two fragments of an obelisk of white marble were discovered to have been added to the original substructure. These, Dr. Clarke thinks, must have been intended merely to maintain the base in its adjusted position until the pedestal could be raised upon it, and that they were not meant to contribute to the support of the column. It is chiefly deserving of notice, however, that the block on which the pedestal rests is inscribed on the four sides with hieroglyphics, the figures or characters of which, being inverted, show that it has been turned upside down; thus affording a complete proof that the stone must have belonged to some more ancient work, which was probably in ruins before the pillar was erected in its present site.

In a remote unfrequented part of the city stands the

*Travels in the Crimea.—A similar feat was accomplished in 1777 by an English captain. See *Irwin's Voyage*.



POMPEY'S PILLAR, AND CLEOPATRA'S NEEDLE.

obelisk well known by the name of Cleopatra's Needle, and which is described as a fine piece of granite covered with hieroglyphics. There were originally two of these, apparently brought from Heliopolis or Thebes to adorn the entrance to the palace of the Ptolemies. About twelve years ago, when Dr. Richardson visited Alexandria, the one stood erect, the other lay prostrate on the ground; but, in regard to the latter, he remarks that it was mounted on props, and seemed as if "prepared for a journey." It has been since removed, with a view of being conveyed to England, though it has not yet, so far as we have been able to learn, reached its destination. The dimensions are sixty-four feet in length, and eight feet square at the base.

Alexandria presents many other remains of sumptuous buildings, of which there is no tradition among the inhabitants on which any reliance can be placed. On each side of what appears to have been one of the principal streets are still to be seen rows of stately marble columns, all overturned and neglected. They are conjectured to be the relics of a magnificent colonnade which extended between the gates of the Sun and Moon, and was regarded as one of the most striking ornaments of the city; but in the hands of the Turks, as some author has observed, every thing goes to decay, and nothing is repaired. Wherever an excavation is made, an arch, a pillar, or a rich cornice, indicates that a splendid structure had once occupied the ground, but can supply no information as to the object, the date, the name, or the founder. For miles the suburbs are covered with the ruins of the ancient town. Heaps of brick and mortar, mixed with broken shafts and mutilated capitals, cover immense vaults, which, serving as reservoirs of water, are replenished on every overflow of the Nile. Perhaps much of this devastation, as well as of the ignorance which prevails respecting it, may be attributed to the effects of that fatal earthquake which swallowed up 50,000 of the inhabitants, and threw down the loftiest of their edifices. But on such subjects all inquiry is vain, for the traveller finds that the degra-

ded beings who now occupy the wrecks of this superb metropolis are equally indifferent and ill-informed as to every event which preceded their own times.



GUADAMA, AN INDIAN IDOL.

GUADAMA, the celebrated Burmese divinity, is represented in our engraving. Temples to his honor, and images, like that which we here give, were found in every part of the country visited by the troops of the British army in the late war. Guadama is said to have been, many ages ago, a teacher among that people: but he was deified on account of his merits.

The Baptists have a prosperous mission in Burmah; and the labours of Mr. Judson, from America, were carried on under difficulties and sufferings of the most painful kind: the "Memoirs of Mrs. Judson," the wife of that devoted missionary, are well worthy of the perusal of all our readers. Several of the *idols* above represented, may be seen, we understand, at the Mission House, No. 6, Fen Court, Fenchurch Street, London.

While writing this, we have lying on the table before us an *alabaster image* of Guadama, as given above. It was brought to England only a few months ago, by a medical friend: the height of it about 14 inches; but it is rudely carved. How shockingly debased must be that people, who can bow down and worship stones, and contemptible figures like these!

THE EYE OF AN INDIAN IDOL.

Dining a few days ago, with a gentleman engaged in the service of the East India Company, after the cloth was removed, we were gratified by a sight of some *silver idols*. Two especially interested us in a high degree: they were representatives of *Guadama*, as in our cut. The sight of them led to conversation on the degrading genius of idolatry, the horrid customs attending it, and the immense treasures which were lavished upon the images and the temples. A medical gentleman referred to "Brand's Manual of Chemistry," as containing a remarkable illustration of the extravagance of idolatry, in the "Eye of an Indian Idol." We give it for the edification of our readers.—"Among the crown jewels of Russia is a magnificent *diamond*, weighing 195 carats. It is the size of a small pigeon's egg, and was formerly the eye of a Brahminical idol, whence it was purloined by a French soldier; it passed through several hands, and was ultimately purchased by the Empress Catharine, for the sum of 90,000*l.* in ready money, and an annuity of 4,000*l.* !

"When called to rebuke," St. Gregory says, "false zeal is all indignation, but true zeal is full of compassion."

THE BLIGHTED ROSE.

How gay was its foliage, how bright was its hue,
 How it scented the breeze that blew round it!
 How carelessly sweet in the valley it grew,
 Till the blight of the mildew had found it!

Now faded, forlorn, scarce the wreck of its charms
 Remains e'en for fancy's renewing;
 Its branches are bare, like its thorny alarms,
 And it lies the pale victim of ruin.

Discontent is the mildew that feeds on the mind,
 That robs the warm cheek of its roses;
 That cankers the breast of the rude or refin'd,
 Where'er it a moment reposes.

'Tis a wizard, whose touch withers beauty away,
 And forbids every pleasure to blossom;
 Insidiously creeps to the heart of its prey,
 And invites cold despair to the bosom.

LONG WORDS.

NOTHING, says Humboldt, strikes Europeans more in the Aztec, Nahuati, or Mexican language, than the excessive length of the words. This length does not always depend on their being compounded, as in the Greek, the German, and the Sanscrit, but on the manner of forming the substantive, the plural, or the superlative. A kiss is called *tetennamiquiliztli*; a word formed from the verb *tennamiqui*, to embrace, and the additive particles, *te* and *liztli*. In the same manner we have *tlatolana*, to ask, and *tellatolaniliztli*, a demand; *tlayhiouiltia*, to torment, and *tellayhiouiltiliztli*, torment. To form the plural, the Aztecs, in several words, double the first syllable; as *miztli*, a cat; *mimiztin*, cats: *tochtli*, a rabbit; *totochtin*, rabbits. *Tin* is the termination which indicates the plural. Sometimes the duplication is made in the midst of a word; for instance, *ichpochtli*, a girl; *-ichpopochtin*, girls: *telpochtli*, a boy; *telpopochtin*, boys. The most remarkable example I have met with of a real composition of words, is found in the word *amatlacuilolitquitcatlaxtlahuilli*, which signifies the reward - given - to - the - messenger - who - carries - a - paper - on - which - is - painted - tidings. This word which

forms by itself an Alexandrine line, contains *amatl*, paper (of the agave,) *cuiloa*, to paint or trace hieroglyphics; and *tlaxtlahuilli*, the wages or salary of a workman. The word, *noilazomahuiztespixcatatzin*, which signifies, venerable - priest - whom - I - cherish - as - my - father, is used by the Mexicans in addressing the priests.—*Humboldt's Researches.*

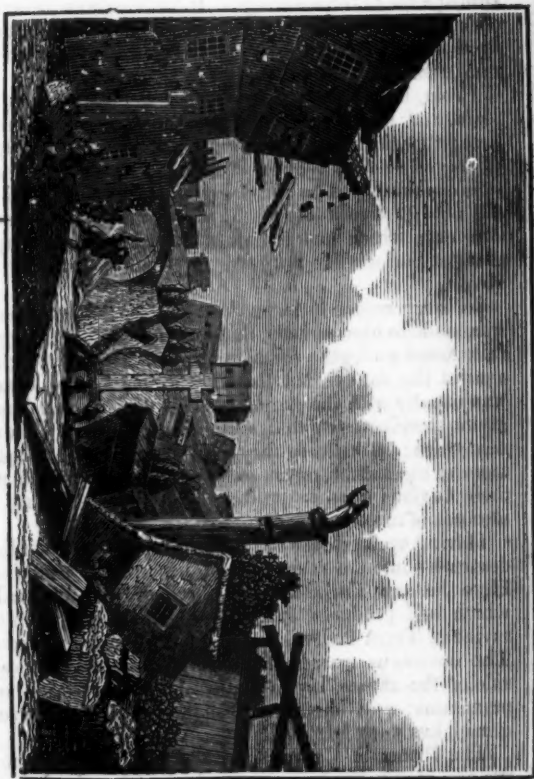
EARTHQUAKES.

EARTHQUAKES IN SICILY AND IN THE TWO CALABRIAS.

The accounts from Sicily were of a most alarming nature. The greatest part of the fine city of Messina was destroyed by the shock of the 5th of February, and what remained was greatly injured by the subsequent shocks. The quay in the port had sunk considerably, and was in some places more than a foot beneath the water. The superb building called the Palazzata, which gave the port a more magnificent appearance than any other in Europe could boast, was entirely thrown down, and the lazaretto greatly damaged. The citadel suffered little, but the cathedral was destroyed, and the tower at the point of the entrance of the harbor much damaged. The wave which had done so much mischief at Scylla, had passed over the point of land at the Faro, and swept away twenty-four persons. The accounts from Melazzo, Patti, Terra di Santa Lucia, Castro Reale, and from the island of Lipari, were very distressing; but the damages done there by the Earthquakes were not so considerable as at Messina.

Sir William Hamilton, from the limited boundaries of these earthquakes, was persuaded that they were caused by some great operation of nature of a volcanic kind. To ascertain this, he began his tour by visiting the parts of the coasts of the two Calabrias which had suffered most from this severe visitation. He every where came to ruined towns and houses, the inhabitants of which were in sheds, many of them built on such insalubrious spots that an epidemic had ensued. These unfortunate

RUINS OF MESINA.



people agreed that every shock they had felt seemed to come with a rumbling noise from the westward, beginning usually with the horizontal motion, and ending with the vortical or whirling motion, which last had ruined most of the buildings. It had also been generally observed, that before a shock, the clouds seemed to be fixed and motionless; and that after a heavy shower of rain, a shock quickly followed.

From Monteleone, Sir William descended into the plain, and passed many towns and villages in a ruined state: the city of Mileto, lying in a bottom, was totally destroyed, without a house standing. Among the many examples afforded by these earthquakes of animals being able to live a long time without food, was that of two hogs, which had remained buried under a heap of ruins at Soriano for forty-two days, and were dug out alive.

In every ruined town he visited, an interesting remark was made to him, namely, that the male dead, were generally found under the ruins in the attitude of struggling against the danger, but that the attitude of the females was usually with the hands clasped over the head, as if giving themselves up to despair, unless they had children near them: in this case they were always found clasping them in their arms, or in some attitude which indicated their anxious care to protect them. How striking an instance of maternal tenderness!

Having walked over the ruins of Oppido, Sir William descended into the ravine, which he carefully examined. Here he saw the wonderful force of the earthquake, which had produced exactly the same effects as in the ravine of Terra Nuova, but on a scale infinitely greater. The enormous masses of the plain, detached from each side of the ravine, lay in confused heaps, forming real mountains; and, having stopped the course of two rivers, great lakes were formed.

The Prince of Cariati showed him two girls, one of the age of about sixteen years, who had remained eleven days without food under the ruins of a house in Oppido; and the other, about eleven years of age, who had been

under the same circumstance six days, but in a very confined and distressing posture.

Sir William describes the port of Messina and the town in their half ruined state, when viewed by moonlight, as strikingly picturesque. On landing, he was assured by several fishermen, that, during the earthquake of the 5th of February, at night, the sand near the sea was hot, and that in many parts they saw fire issue from the earth. This had been often repeated to him in the Calabrian plain.

The force of the earthquakes, although very violent at Messina, and at Reggio on the opposite side of the strait, was not to be compared to that which was felt in the plain. In the former city, the mortality did not exceed seven hundred, of a population of thirty thousand. A curious circumstance happened there also, to prove, that animals can sustain life for a long time without food. Two mules belonging to the Duke of Belviso remained under a heap of ruins, the one twenty-two and the other twenty-three days: for some days after they refused their food, but drank plentifully, and finally recovered. There were numberless instances of dogs remaining many days in the same situation; and a hen belonging to the British Vice Consul, having been closely shut up beneath the ruins of his house, was taken out on the twenty-second day, and recovered, although at first it showed but little signs of life: like the mules, it did not eat for some days, but drank freely. From these instances, and from those above related, of the girls at Oppido, and the hogs at Soriano, as well as from several others of the same kind, it may be concluded that long fasting is always attended with great thirst, and a total loss of appetite.

The Commandant of the Citadel of Messina assured him, that on the fatal 5th of February, and the three following days, the sea at the distance of about a quarter of a mile from that fortress rose and boiled in a most extraordinary manner, and with a horrid and alarming noise, while the water in the other parts of the Faro was perfectly calm. This appeared to him to point out exhalation.

tions or eruptions from cracks at the bottom of the sea, which were probably made during the violence of the earthquakes; and to these phenomena he ascribes a volcanic origin. He thus attempts to explain the nature of the formidable wave which was represented as boiling hot, and which, as has been already noticed, was so fatal to the inhabitants of Scylla.

Spallanzani, who visited Messina nearly six years afterwards, found the city still a mass of ruins, and the streets, except some of the principal ones, impassable; the inhabitants had begun to rebuild their dwellings, and that on an improved plan, better calculated to obviate the effects of such another visitation; but even at that distance of time, he describes them as hardly recovered from their consternation, and still chiefly residing in the temporary wooden sheds they had erected in the neighborhood for shelter after the catastrophe.

CALENDAR OF NATURE.

FEBRUARY.

Though night approaching bids for rest prepare,
Still the flail echoes through the frosty air,
Nor stops till the deepest shades of darkness come,
Sending at length the weary laborer home.—*Bloomfield.*

FEBRUARY is so called from the Roman custom of burning expiatory sacrifices, *Februalia*; the Saxons called it *Sproutkele*, because the kale, or cabbage, began to sprout; and also *Solmonath*, or pan-cake month, because cakes were offered to the Sun.

This is the most cheerless month in the year. There may be pleasant varieties of it—the latter end may, and frequently is, much more agreeable than the commencement; but as a whole, it is as we have characterized it. There is a lack of comfort felt every where. In real winter weather, the clear frosty air sharply salutes the face by day, and reveals to the eye, at night, a scene of pure and sublime splendor, in the lofty and interesting blue sky, glittering with congregated stars, or irradiated with the placid moon. There was a sense of vigor,

of elasticity, of freshness about us, which made it welcome; but now every thing presents to the eye, accustomed so long to the brightness of clear frosts, and the pure whiteness of snow, a dingy and soiled aspect; the earth is sodden and splashy with wet, and even the very fireside does not escape the comfortless scene of humidity. Let us felicitate ourselves that such a joyless period is seldom of long duration. The winds of March speedily come piping their jovial strains, clearing the face of the blessed heavens from their sullen veil of clouds, and sweeping away the superabundant moisture from earth and air. Oh! blithe and animating is the breath of March! It is like a cool but spirit-stirring draught, elevating but not enervating the heart; deadening the memory of past evil, and expanding it to the delicious hope of future delights. So precious a boon, however, is not exclusively permitted to March—February is often allowed to be a liberal partaker, ere its close, and we have known the winds lift up their voices this month with all their triumphant and sonorous energy. Nothing can perhaps illustrate so lively our idea of a spirit, as a mighty wind—present in its amazing power and sublimity, yet seen only in its effects. We are whirled along with its careering torrent with irresistible power. How it comes rushing and roaring over the city, like the billows of a mighty ocean—then for the crash of chimneys, the down toppling of crazy gables, the showering of tiles upon the pavement, as if the bomb shells of a besieging army were demolishing the roofs, and rendering it even death to walk the streets. Then for a scene of awful grandeur upon the glorious ocean. That which, but an hour before, was calm and sun bright, a variety of vessels lying at anchor, or sailing to and fro in serene beauty, *then* is a scene of sublime and chaotic uproar—the waves rolling and foaming—the vessels meanwhile laboring amidst the riotous billows as for life, and tugging at their cables as if mad for their escape. Many a beautiful, many a wild, many an animating spectacle, is to be witnessed on the shores of our happy land, in such moments.

It is a cheering sight, even while all without is frosty and wintry, to see, as we pass, tufts of crocuses and snow-drops flowering in pots, and hyacinths, narcissi, &c., in glasses, displaying their bulbs and long fibrous roots in the clear water below, and the verdure and flowery freshness of summer above. It is in accordance with our ideas of home-comfort and elegance. There is something pure and refreshing in the appearance of plants in a room; and watched and waited on, as they are generally by the gentler sex, they are links in many pleasant associations. They are the cherished favorites of our mothers, wives, sisters, and friends not less dear, and connect themselves in our mind with their feminine delicacy, loveliness, and affectionate habits and sentiments.

ADVANTAGES OF SCIENTIFIC STUDY.

BY G. C. VERPLANCK.

THE studies which have scientific truth for their object have, when rightly employed, yet another proper and excellent tendency. It is, that they train the mind to the habit of lifting itself above temporary and accidental circumstances, to the consideration of leading principles. The mind that has long been accustomed to the attentive and exact investigation of mathematical or moral certainty, is not only enriched by the stock of primal truths thus acquired, but is rendered desirous and capable of applying the same or some similar strict analysis, and so attaining an equally satisfactory certainty in all its other opinions. It cannot easily content itself in any of the important concerns of life, with blindly following the guidance of early prejudice, of transient impulses, of habit, of caprice, of some fascinating example, of popular opinion, of the fashion of some little circle, or of the authority of some great name. In all things it longs and yearns, as it were, to know the reasons of its faith and professions. This appetite for solid knowledge grows with its own indulgence, and thus the intellectual habits of the study may pass with undiminished strength, and it may be with increased usefulness, into the ordinary

government of the understanding and the whole conduct of life. Thus it is, that the discipline and accomplishments of scientific study may aid in giving to the character and conduct that unity and consistency which can spring from principle alone. I do not mean that consistency that plumes itself upon a blind devotion to a sect, a party, a leader, to a string of phrases, a form of words, or an empty name. This is but the idolatry of the mind, the slavery of the understanding. Under the cover of consistency it is often but the pretext or the cause of the most flagrant contradictions.

Still less do I honor that consistency which is but an obstinate adherence to any notions or associations once accidentally formed or professed; for this is to deny ourselves for ever the capacity of becoming better or wiser than we once were. I speak of a consistency admitting of many honest changes of opinion, though of no interested ones. I speak of that consistency of motive and character that is to be found in him—and in him only—who walks through life in singleness of purpose and openness of heart, seeking the right and the truth for himself and the means of happiness for others. It springs from the union of reason with sentiment. Kind dispositions, warm and generous feelings alone cannot give it. These may frequently prompt to right action; they may make error pardonable, and sometimes lovely; but uncertain as they are, fluctuating, unstable, liable to be deluded by sympathy, to be hurried into passion, and when their intention is the best, then often, ignorantly to cause the greatest harm, unless they are guided by enlightened principles, they can never be durably useful or honorably consistent. Alike in the social and domestic relations and in the great concerns of a nation's policy, the principles of right and the rules of public and private utility, pointed out by wise experience, are the only sure guides to happiness. Like the bright stars of the pole or the steady-pointing-needle, they enable the well informed patriot to hold his undeviating course across the trackless ocean of life, defying its currents and its blasts, where he would otherwise wander, the sport of every gale, or at best

creep timidly along the coast and narrow bays, following all their windings. Truth—as Bacon taught in his quaint and figurative wisdom—Truth and Goodness are one, differing but as the seal from the print. Therefore it is, that the possession of valuable and well arranged knowledge of any sort, and still more that mental training thus gained, have their most natural and best operation in leading us to establish firmly in ourselves those principles and practical opinions that may be the guides of intelligent action. Wherever wise and consistent conduct appears, there is good evidence that wise and pure principles, to some extent at least, have been firmly fixed. These may be traced in minds very little illuminated by human learning; but they should be “mightiest in the mighty.” The power and the evidence of well-settled and lofty principles should appear most manifest in those, whose youth has been trained to weigh the force of argument and to trace the laws of the Creator’s wisdom. Their minds, elevated as they have been to noble subjects of meditation, should be habitually raised to the contemplation of the good and the fair—enlarged as they have been by various information, they should be fertile of those things that bring freedom and peace to man.

Should be! Ought to be! And is it not always so? Alas, how often is it the reverse! How seldom have the wise wisdom enough to know how to use their wisdom aright! Scenes of bounty and justice, bright views of faith and honor, of generous motives, and adventurous undertakings crowned with merited success, all lie spread before them as in some delicious landscape; but the toys and trifles of selfish aggrandizement or grovelling desire are immediately before their eyes, engrossing their whole attention and quite shutting out the diversified and magnificent prospect. The talent of such men may have been invigorated by education, but being never given to the defence or the service of their country or their neighbor, it is like that acquired by the training of the boxer to be wasted in idle contests for paltry rewards.

Foolish and unfortunate men! They know not what they lose. In thus applying to selfish aims and with sel-

fish motives that which was given for the use of society, they narrow their own capacities to the scale of their objects of pursuit. The eye of the judgment adapts itself to the minute trifles on which it is habitually employed, and becomes feeble and dim-sighted to larger and distant objects. The intellect, whatever skill and adroitness it may acquire in its way, is dwarfed down to trickish schemes, sorry arts, and petty intrigues. Thus do they lower themselves in the rank of intellectual being. They shut themselves out from the best delights of rational existence. The serene but exquisite pleasures of a firm sense of duty, of a conscientious support of right, of an enlightened and disinterested benevolence, have for them no reality. Their talents and their acquirements are to them but a vile merchandise, wherewith they carry on a huckstering traffic for poor gains. They may heap up riches; they may build themselves a name, they may climb, or may crawl, to the high places of power; still to them society is stript of its beauty, its glories, and its best excitements. Life is to them barren, and cheerless, and wearisome. The rewards and the consolations of the truly wise, they can never have. Blessings spring not up in their paths, nor do Friendship and Affection, Gratitude and Honor, crowd around them as the glad companions of their way.

ILLUSTRATIONS OF NATURAL PHENOMENA.

NO. II.—ON THE TIDES OF NARROW SEAS.

WE have already seen that, if the earth were a sphere, entirely covered with water, the attraction of the moon would cause a rise and fall of the water upon its surface, twice in the course of rather more than twenty-four hours. The waters of an open ocean would be heaped up in the parts under the moon, and in the parts which are exactly opposite, on the other side of the earth. And this great wave would constantly follow the apparent course of the moon. It would be of immense breadth; for there would be only two ridges and two hollows in the whole circumference of the earth, which is about twenty-four thousand miles at the equator.

But if we only look at an artificial terrestrial globe, or at a map of the world, we shall see at once that *such* a tide can never take place; for the land every where interferes with the sea; and the depth of the sea itself, although great, according to our notion of distance, is very small compared with the whole bulk of the earth. The greatest height of any mountain above the level of the sea is about five miles, and it is probable that the greatest depth of the sea is not much more. Now the earth is a globe, the diameter of which is sixteen hundred times as great as this, so that the utmost depth of the sea, on an artificial globe of sixteen inches in diameter, would be represented by a thin fibre only a hundredth part of an inch thick, or about as thick as the paper on which this is printed.

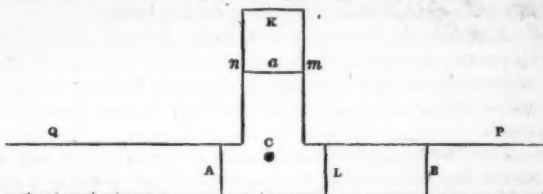
Still, wherever there is an ocean of considerable extent, *measuring from east to west*, there will be formed a tide-wave, on the same principles as we have already supposed, the ridge of which follows the apparent course of the moon from east to west. Now the only part of the sea, in which the action of the moon upon the waters can cause any thing like such a regular tide, is the Great Southern Ocean, including the southern part of the Atlantic and Pacific Oceans, and of the Indian Sea. Although this great belt of water does not lie under the equator, it extends, with little interruption, in a direction from east to west, round the whole of the globe. In these seas, then, we may look for a tide of great regularity; and it is accordingly found.

The sea next in extent, in a direction from east to west, is the remaining part of the Pacific Ocean.

With respect to the Atlantic Ocean, although it extends nearly from Pole to Pole, in a direction from north to south, its breadth from east to west is by no means so great; and for the present purpose we may consider it as a great arm of the Southern Ocean, stretching in a direction at right angles, to the course of the general tide-wave in that open sea.

To understand how the tides in such an arm of the sea

are formed, let us suppose a long trough of water $p\ q$, and a narrower trough $c\ k$ opening into it.



Now suppose the water in $p\ q$ to be set in motion, so as to have a succession of waves passing along from p to q ; and suppose A and B to be two successive *ridges* of such waves, with a *hollow* between them at L . Then, when the ridge A is at c , the water will be highest at c ; as the ridge moves along, the water at c will sink, and be the lowest when L reaches c ; and it will again rise until the second ridge B has reached c .

But it is plain, that since there is nothing to stop some of the water of the ridge A from running along the trough $c\ k$, to find its level, part of it will run along, and form a moveable *ridge* (a), which will advance along $c\ k$ exactly in the same manner as A moves along $p\ q$. There will therefore be a *new set of waves* moving along $c\ k$, *not* in the direction of the *width* of $c\ k$, but in the direction of its *length*.

It must also be observed, that the ridge a may not move so fast as the original ridge A , but that the *time* elapsed between the passage of two successive ridges past any point (as m , in $c\ k$) will be the same as the time between the passage of two successive ridges, $A\ B$ past c ; since the ridge B would give rise to a wave under the very same circumstances as those in which A caused one.

Now we may conceive $p\ q$ to represent the Great Southern Ocean, along which the *tide-wave* is constantly passing, in the direction $p\ q$, from east to west. In like manner, $c\ k$ may represent the Atlantic Ocean, of which m is on the African coast, and n on the American coast. And we shall have a succession of *tide-waves*, such as

a, moving from *south to north*, and succeeding one another, after the same interval of *time* as that in which *A* succeeds *B*, or a little more than twelve hours.

Accordingly, it is found that, in the Atlantic Ocean, the tide-wave does move from south to north, the ridge of the waves extending in a slanting direction, and in an irregular form, across from the African to the American coast.

In order to explain the manner in which these waves cause the tide in different branches of the same sea, we will trace the course of the tide-wave round the coast of England.



Suppose the moon to have passed the meridian of

Ushant, on the N. W. part of the coast of France, at twelve o'clock in the day, the tide-wave of the Atlantic will reach Ushant soon after three o'clock on the same afternoon, its ridge stretching towards the N. W. so as to fall a little south of Cape Clear in Ireland.

This wave soon after divides itself into three branches. One part passes eastward up the English Channel, causing high-water in succession at all the places at which it arrives. It moves at about the rate of fifty miles an hour, so as to pass through the straits of Dover, and reach the Nore about twelve o'clock at night. The second branch of the tide-wave passes more slowly up the Irish Channel, causing high-water along the coast of Wales, Lancashire, and Cumberland, and upon the eastern coast of Ireland. The third and principal part of the same wave moves much more rapidly, being in a more open sea. By six o'clock it has reached the northern extremity of Ireland: about nine it has got to the Orkney Islands, and forms a wave extending *due north*. At twelve at night, the summit of the same wave extends from the coast of Buchan in Scotland eastward to the Naze in Norway, and in twelve hours more it has flowed down the eastern coast of England, forming the *flood-tide* from the North, and reached the Nore, where it meets the morning tide, which left the mouth of the English channel about eight hours before.

The consequence of the meeting of the two tides at the Nore is very remarkable in the Thames. Sometimes the tide from the North is a little later than the other, and continues to flow after the other has ebbed considerably, thus causing a *second* tide on the same day. Another consequence is, that on the whole eastern coast of England, the tides are upon the whole highest when the wind blows strongly from the North West, or off-shore. This may appear strange at first: but the cause is quite plain, when we remember that the tide is caused by such a wave as has been described, passing round the northern extremity of Scotland into the German Ocean.

It will be seen also that the tide in the English Channel, is twelve hours *earlier* than the tide in the German

Ocean: so that if the highest spring-tide from the *south* reached the Nore at twelve o'clock in the *day*, the highest spring-tide from the *north* would not occur till twelve o'clock at *night*.

THE CAMEL.



THE Camel is an inhabitant of the old world, and is found almost exclusively in Asia and Africa.

It has been created with an especial adaptation to those regions wherein it has contributed to the comfort, and even to the very existence, of man, from the earliest ages. It is constituted to endure the severest hardships with little physical inconvenience. Its feet are formed to tread lightly upon a dry and shifting soil; its nostrils have the capacity of closing, so as to shut out the driving sand, when the whirlwind scatters it over the desert; it is provided with a peculiar apparatus for retaining water in its stomach, so that it can march from well to well without great inconvenience, although they be several hundred miles apart. And thus, when a company of eastern merchants cross from Aleppo to Bussorah, over a plain of sand, which offers no refreshment to the exhausted senses, the whole journey being about eight hundred miles, the camel of the heavy caravan moves

cheerfully along, with a burden of six or seven hundred weight, at the rate of twenty miles a day; while those of greater speed, that carry a man, without much other load, go forward at double that pace and daily distance.

Patient under his duties, he kneels down at the command of his driver, and rises up cheerfully with his load: he requires no whip nor spur during his monotonous march; but, like many other animals, he feels an evident pleasure in musical sounds; and, therefore, when fatigue comes upon him, the driver sings some cheering snatch of his Arabian melodies, and the delighted creature toils forward with a brisker step, till the hour of rest arrives, when he again kneels down, to have his load removed for a little while; and if the stock of food be not exhausted, he is further rewarded with a few mouthfuls of the cake of barley, which he carries for the sustenance of his master and himself. Under a burning sun, upon an arid soil, enduring great fatigue, sometimes entirely without food for days, and seldom completely slaking his thirst more than once during a progress of several hundred miles, the camel is patient, and apparently happy. He ordinarily lives to a great age, and is seldom visited by any disease.

The camel with one hump, which we ordinarily call the dromedary, has been reared at one place in Europe for two centuries: this place is Pisa, in Italy. His habits are there, to a certain extent, the same as in his native region; but the soil and climate of Europe are ill adapted to his organization. The camels of Pisa have degenerated; they are weaker than those of the East; and their lives are of comparatively short duration. This circumstance is a convincing proof that the natural locality of the camel is an arid and thirsty region, offering little vegetable food, and that little of the coarsest kind. The camels of Pisa have the advantage, at San Rossora, the place where they are reared, of a flat and sandy country, having brambles and low bushes, which administer, in some degree, to their natural habits. But still they are degenerated. They are not, by any means, completely naturalized; and, probably, will become more

and more influenced by their peculiar situation, the farther the breed is removed from the original stock.

Mr. MacFarlane mentions the precision with which these docile creatures executed their duties, without scarcely a command from their drivers. Marching into the yard in single file, they formed a crescent; and the first camel having knelt down to be relieved of his load, the rest patiently waited till it should come to the turn of each to be disburdened in a similar manner.

MINERAL KINGDOM.

No. 3.—IRON.

IRON is the most valuable of all the metals. Though mentioned in the Pentateuch, we have reason to believe, from the facts, that the fabrication of steel was unknown to the ancients, and that they were wholly destitute of metallurgical skill—that its uses were little known in the earlier periods of society. Its use has followed the progress of civilization in the world; and the amount of it consumed by any nation, at the present day, indicates very truly the degree of its advancement in the arts and sciences. The alchemistical name of iron was *Mars*. The Romans employed, as a substitute for it in their armor, an alloy of copper and tin.

Iron is the most universally diffused metal throughout nature. It is found in animals, in vegetables, and in almost all bodies. It is seldom found native, but combined with a great variety of substances. It is particularly distinguished by its magnetical properties, by its hardness and elasticity, by its ductility, and the property of being welded; but it is very difficult to fuse. Iron soon rusts, or oxydates, when exposed to the action of water. Iron filings, agitated in water, become oxydated, and assume the form of a black powder, called *martial Ethiops*. When fused in large furnaces it is made to flow into a kind of mould formed in sand. This first product, which is exceedingly brittle, and not at all malleable, is called cast iron, of which are formed stoves, pipes,

cannon, and other articles. Cast, or crude iron, is in three states, white, gray, or black, according as it contains a larger proportion of carbon, an exact proportion of carbon and oxygen, or a larger proportion of oxygen. To render the iron malleable, it must be freed from the carbon and oxygen which it contains, by being fused and kept in that state for some time, stirring and kneading it all the while; by this means the carbon and oxygen unite, and are expelled in the form of carbonic acid gas. It is then subjected to the action of large hammers, or to the pressure of rollers, by which the remaining oxyde of iron and other impurities are forced out. It is now called forged or wrought iron, and is capable of being welded and worked by hammers into any form.

There are several varieties of iron in this state, arising from the intermixture of other substances. There is one kind of forged iron, which when cold is ductile, but when heated is extremely brittle; it is also fusible. Another kind possesses precisely the opposite properties. The causes of these peculiarities have not been perfectly explained. Iron is capable of being reduced to a third state, which is that of *STEEL*, a most valuable metal, consisting of iron combined with carbon. It is chiefly used for edged tools, and other sharp and cutting instruments, where hardness is required, and from the high polish of which it is susceptible, it is used in ornaments of various kinds. By heating steel to redness and cooling it suddenly, it can be made much harder than any other metal; and if heated to a lower temperature than redness, and suddenly cooled, it becomes the most elastic of all the metals.

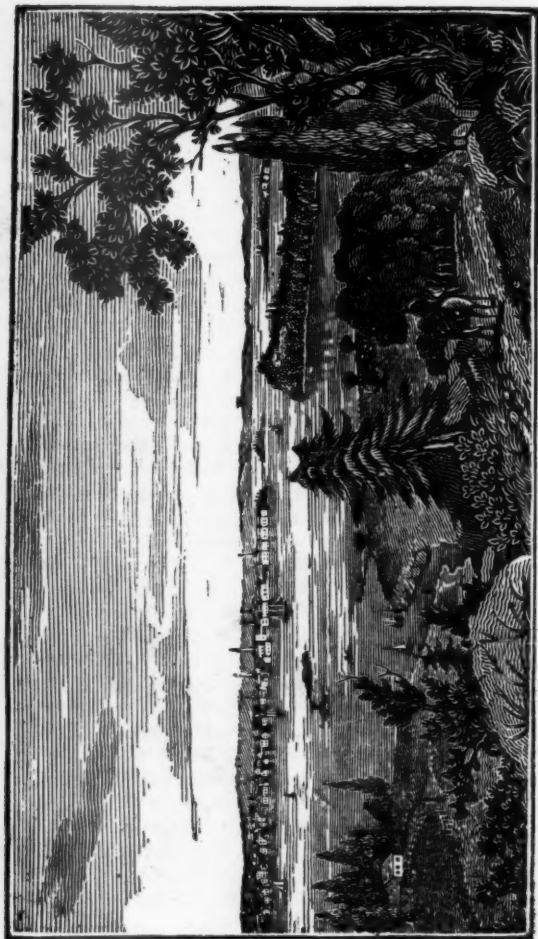
Cast iron contains too great a quantity of carbonaceous substance—it may be called steel too much steelified—it is therefore exceedingly brittle, and not at all malleable. Forged iron is iron purified from all foreign substances. And in regard to its property of being welded, we may judge from the following account: Were it not for the property iron has of being welded, that is, united in various parts without the assistance of rivets or solder, this very plentiful metal would be useless for many purposes;

but, as it is, what may not be accomplished by it! The most stupendous metallic fabric ever executed by man, is the Chinese *bridge of chains*, hung over an awful precipice near Ringtung, to connect two mountains. In this bridge there are twenty-one chains, stretched over the valley or abyss—these are bound together by other chains which cross them. The whole forms a perfect and safe road, extending from the summit of one mountain to that of the other.

Native or natural malleable iron is a rare production of this globe, nearly all that has ever been found upon it having come to us from the atmosphere. It occurs in a vein traversing a mountain of gneiss, near Grenoble, in France. It has also been found at Kanesdorf, in Saxony, and more recently in three places in the United States—at Canaan in Connecticut, in Pennsylvania, and in North Carolina. At the latter place it was found loose in the soil, in a mass weighing more than twenty pounds. Meteoric iron is contained in all meteoric stones; in some it exists in a very feeble proportion; in others it forms one quarter of their weight; and again in others, it constitutes nearly the entire mass; while the largest masses of it ever found, consist of it wholly, without the smallest mixture of foreign matters. In the two first mentioned conditions, it has often been seen to fall from the heavens, while in the solid state it never has been observed, by credible witnesses, to fall, but on one occasion at Agram, in Croatia. Some of the largest masses of meteoric iron known, are the following: that found by Pallas, in Siberia, weighing one thousand six hundred and eighty Russian pounds; that discovered by Rubin de Celis, in the district of Chaco-Gualamba, in South America, and which weighed fifteen tons; and that found near Red River in Louisiana, weighing three thousand pounds, and which is now deposited in the collection of the Lyceum of Natural History in New-York. Beside these, other very considerable pieces have been noticed in Africa, Mexico, and Bohemia. Meteoric iron has been worked, as a curiosity, into knives, swords, and other instruments.

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CITY OF NEW-YORK, FROM WEEHAWK.